

Amendments to the Abstract (Replacement Abstract):**METHOD AND APPARATUS FOR SEPARATING BITUMEN
FROM PARTICULATE SUBSTRATES**

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ABSTRACT

Method and apparatus for treating an ore comprising mineral
substrate particles surrounded by hydrocarbon compounds to
10 recover a hydrocarbon and a cleaned substrate. Hydrocarbonaceous
ore containing bitumen is mixed with water to form a slurry. The
slurry is heated to about 80°C and is intensively sheared to
condition the slurry for separation by shear-fracture of the
hydrocarbon layers surrounding the particles. The conditioned
15 slurry is blended with an aqueous hydrogen peroxide solution
which enters the grains and is decomposed therein, increasing the
hydrophilicity of the particle surfaces and creating bubbles of
free oxygen within the grains which disrupt the hydrocarbon
envelope and attach to the bitumen. Both free and bound
20 hydrocarbons in the ore are thereby released from the substrate
particles. Oxygen-buoyed hydrocarbon globules are separated from
the particles by flotation. Tailings from the process are
substantially free of hydrocarbon contamination and are
environmentally suitable for landfill disposal.